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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 08/852,495 | 05/07/97 | RUDDY D | 17957-000110 |

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| EXAMINER | |
|---|---|
| VANDER VEGT,F | |
| **ART UNIT** | **PAPER NUMBER** |
| 1644 | |

**DATE MAILED:** 10/26/98

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

| Office Action Summary | Application No. 08/852,495 | Applicant(s) Ruddy et al |
|---|---|---|
| | Examiner F. Pierre VanderV gt | Group Art Unit 1644 |

☒ Responsive to communication(s) filed on *Aug 7, 1998* .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *three* month(s), ~~or thirty days, whichever is longer~~, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

**Disposition of Claims**

☒ Claim(s) *1-28* is/are pending in the application.

Of the above, claim(s) *12-25 and 28* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-11, 26, and 27* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

**Application Papers**

☒ See the attached Notice of Draftsperson's Patent Drawing Review, substitute PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, substitute PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Notice to Comply with the Sequence Rules

*--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---*

## DETAILED ACTION

This application is a continuation-in-part of application S.N. 08/724,394, which is a continuation-in-part of application S.N. 08/630,912, which is a continuation-in-part of application S.N. 08/652,265.

Claims 1-28 are currently pending in this application.

### *Election/Restriction*

1. Upon further consideration and in view of Applicant's traversal filed August 7, 1998, the Examiner has elected to rejoin the claims of Group I (1-3 and 26) with those of Group II (4 and 27) and Group III (5-11) because the claims are not drawn to patentably distinct inventions and would not require separate searches.

2. Applicant's election with traverse of Group I in Paper No. 8, filed August 7, 1998 is acknowledged. The traversal is on the ground(s) that the Examiner has not shown that the method of Group VI can be performed using a materially different *product* [sic]. This is not found persuasive because the Examiner has indeed shown this. It was stated previously that, "*In the instant case the nucleic acid-based assay of group VI is not strictly dependent upon the oligonucleotide pairs of Group II or by measuring annealing of an oligonucleotide sequence containing a particular mutation of Group I, but can be performed by any method available to the skilled artisan for probing for specific nucleic acid sequences.*" It is noted that Applicant had changed the wording of the statement in order to better suit his arguments. The Examiner's position is correct because the method of analysis of Group VI is drawn to the detection of polymorphisms in the region. The method can be performed using primers which do not contain any of the polymorphic sites of Group I but may be located upstream or downstream of such sites and used for example, as sequencing primers to detect such polymorphic sites which would be located downstream or upstream of the non-polymorphic primer. Accordingly, search of Group VI would require additional burdensome searching of sequences not required by the search of Groups I and II.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 12-25 and 28 are withdrawn from further consideration by the Examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed in Paper No. 8.

Accordingly, claims 1-11 and 26-27 are the claims elected by Applicant and are the subject of examination in this Office Action.

***Specification***

4. The disclosure is objected to because of the following informalities:

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

The specification discloses nucleotide sequences, for example, throughout Table 1, in the written specification which must be assigned a SEQ ID NO. Regardless of whether nucleotide is specifically claimed in the instant application or not, 37 CFR 1.182(c, d and e) put forth a clear requirement for each sequence to be identified by a SEQ ID NO and be represented both in computer readable form (CRF) and on the paper copy corresponding to the CRF. Applicant must provide a substitute CRF, a corresponding paper copy and a new statement that the content of the CRF and the paper copy are the same and that they contain no new matter. See MPEP 2422.03-2422.04.

The tables provided as Table 1 and Table 2 are on pages which are not actually part of the specification, rather they are on separate pages following the specification. It is suggested that said table on separate pages be canceled and replaced with identical tables to be inserted into an appropriate location in the specification. It should be further noted that the tables are printed too close to the top of the page and, as a consequence, the legend at the top of each page has been obliterated by the necessary holes punched into the paper for attachment into the file wrapper. .

Appropriate correction is required.

***Claim Objections***

5. Claims 1-11 and 26-27 are objected to under 37 CFR 1.182(d) for failing to disclose the Sequence I.D. NOS. of the various oligonucleotide sequences.

Appropriate correction is required.. Appropriate correction is required.

***Claim Rejections - 35 U.S.C. § 112***

6. Claims 1-11 and 26-27 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for oligonucleotides consisting of at least 8 to about 100 consecutive bases which would contain a specified polymorphism, does not reasonably provide enablement for oligonucleotides comprising at least 8 to about 100 consecutive bases containing a polymorphic site. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The specification disclosure is insufficient to enable one skilled in the art to practice the invention as broadly claimed in claims 1-11 and 26-27 without an undue amount of experimentation. The scope of the claims is not commensurate with the enablement provided by the disclosure with regard to the extremely large number of oligonucleotides broadly encompassed by the claims. Further, the term "comprising" in claim 1, line 1, is open-ended. It would open up the oligonucleotide sequence to include other residues, up to and including an entire chromosome. The specification does not teach the specificity of the polymorphisms for being within the sequences of SEQ ID NOs:1 and 2 and said sequences, particularly those which are short sequences, may also be present in unrelated genomic sequences or usable as probes/markers for unrelated mutations and/or conditions. The claim would therefore encompass matter which is not contemplated as part of the instant invention. In re Fisher, 166 USPQ 18 indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute.

In view of the quantity of experimentation necessary, the limited working examples, the unpredictability of the art, the lack of sufficient guidance in the specification and the breadth of

the claims, it would take undue trials and errors to practice the claimed invention and this is not sanctioned by the statute.

### *Claim Rejections - 35 U.S.C. § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are drawn to oligonucleotides comprising naturally occurring polymorphic sites. An entire human chromosome, which inherently contains all of the recited polymorphic sites, reads upon the instant invention because the specification does not set forth any upper limit for the size of the claimed oligonucleotide sequences. The claim further makes no provision that said oligonucleotides are isolated and/or purified and the claim therefore reads broadly upon in vivo human chromosomes and RNA molecules containing said polymorphic sites and the claims therefore broadly read upon a human being, which is a product of nature and constitutes non-statutory subject matter.

### *Claim Rejections - 35 U.S.C. § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-11 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Vogel et al (U on form PTO-892).

Base claim 1 recites "oligonucleotide comprising" and therefore encompasses an entire human chromosome. The Vogel et al reference teaches isolated human chromosomes (Figures

2.9 and 2.10 in particular), including chromosome 6, from which the sequence of Figures 1 and 2 are ultimately derived. An entire human chromosome, which inherently contains all of the recited polymorphic sites, reads upon the instant invention because the specification does not set forth any upper limit for the size of the claimed oligonucleotide sequences. It should be further pointed out that the prior art need not specifically point out any of the recited polymorphic sites because the compound remains the same, regardless of further characterization of an otherwise old product by the Applicant. The prior art teaching anticipates the claimed invention. Claims 26 and 27 are included because the "kit" is not disclosed in the instant specification as comprising anything more than the recited polymorphic site-containing oligonucleotides.

***Claim Rejections - 35 U.S.C. § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-11 and 26-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Boretto et al (V).

Boretto et al teaches anonymous markers and polymorphic sites on human chromosome 6 which identify human hemochromatosis. While Boretto et al does not teach the specific nucleic acid sequences of the markers, further characterization of an otherwise old product does not change the inherent properties of that product. The oligonucleotides of the claimed invention and

the markers taught by Boretto et al appear to be the same or similar absent a showing of unobvious differences. The office does not have the facilities and resources to provide the factual evidence needed in order to establish that there is a difference between the materials, i.e., that the claims are directed to new materials and that such a difference would have been considered unexpected by one of ordinary skill in the art, that is, the claimed subject matter, if new, is unobvious. Claims 26 and 27 are included because the "kit" is not disclosed in the instant specification as comprising anything more than the recited polymorphic site-containing oligonucleotides. If weight is given to "kit" as a "container," such would not be distinguishable from the taught markers in a vial/test tube/other lab apparatus. If weight is given to "kit" as implying packaging, such would have been obvious to permit the artisan to conveniently practice the diagnostic methods suggested by the reference.

In the absence of evidence to the contrary, the burden is on the Applicant to prove that the claimed materials are different from those taught by the prior art and to establish patentable differences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989).

***Conclusion***

10. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

11. Papers related to this application may be submitted to Technology Center 1600, Group 1640 by facsimile transmission. Papers should be faxed to Group 1640 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The fax phone number for official documents to be entered into the record for Art Unit 1644 is (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Pierre VanderVegt, whose telephone number is (703)305-6997. The examiner can normally be reached Monday through Friday from 8:00 am to 4:30 pm ET. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Christina Chan can be reached at

(703)308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist, whose telephone number is (703)308-0196.

David A. Saunders

DAVID SAUNDERS
PRIMARY EXAMINER
ART UNIT 182-1644

October 26, 1998
F. Pierre VanderVegt, Ph.D.
Patent Examiner
Art Unit 1644